

14. Three of the four elements that Mr. DeGraff claims are absent are the same as three of the elements discussed above in connection with claim no. 14 of the '515 Patent or differ from those elements in ways that are immaterial here. (See DeGraff Aff. ¶¶ 19-25). These are the elements referred to as Elements 14.2, 14.3 and 14.8 in my prior affidavit. (Jones Aff. ¶¶ 21-23 and 28). For the reasons discussed above (¶¶ 7-10), Mr. DeGraff is incorrect. Those three elements are not missing in the Hoover Fusion.

15. The fourth element that Mr. DeGraff maintains is missing concerns the requirement that there be a disc "provided on the outside of the [inner] cyclone intermediate the receiving chamber and the air outlet of the [outer] container." (See DeGraff Aff. ¶¶ 26-27); see also discussion of Element 15.16 in the Jones Affidavit (¶ 47). Mr. DeGraff claims that the disc "is not on the outside of the cyclone, but is secured about an upper portion of the receiving chamber." (DeGraff Aff. ¶ 27). I disagree. The disc unquestionably is on the outside of the inner cyclone. Indeed, the inside diameter of the disc touches the outer surface of the inner cyclone and is affixed to the outside of the inner cyclone by the same screws that also secure it to the shroud means. The disc is not secured to the dirt receiving chamber. Rather, the dirt receiving chamber twists onto and is secured to the disc. A photograph showing the location of the disc on the inner cyclone is attached as Exhibit 32. Mr. DeGraff also claims that the disc is not "intermediate" the dirt receiving chamber and the air outlet of the container (here, the shroud) because he interprets "intermediate" to mean "in the middle" and concludes that the disc is not so situated. (DeGraff ¶ 27). Again, I disagree. In my opinion, a person of ordinary skill in the art of cyclonic vacuum cleaner technology would understand the word "intermediate" as used here to

mean “between,” not “in the middle.” Interestingly, I note that Mr. DeGraff did not disagree with me that “a position intermediate to the cone opening and the air inlet to the cyclone” as used in claim no. 1 of the ‘008 Patent meant a position below the air inlet to the cyclone and “somewhere” before the cone opening at the bottom of the inner cyclone—not necessarily the midpoint location. (See discussion of Element 1.16 in the Jones Affidavit (¶ 62) (emphasis added)). In any event, the point is academic because the Hoover Fusion’s disc not only is between the shroud and the dirt receiving chamber, but also is in the middle of those two parts. Indeed, the disc on the Hoover Fusion is situated such that it touches both the bottom of the shroud and touches the top of the dirt collection chamber. A photograph showing where the disc is situated in relation to the shroud and the dirt collection chamber is attached as Exhibit 33.

**Claim Nos. 16 and 17 of the ‘748 Patent**

16. In my prior affidavit, I expressed the opinion that the Hoover Fusion also has each of the elements of claim nos. 16 and 17 of the ‘748 Patent. (Jones Aff. ¶¶ 50-53). Both of these claims are directly or indirectly dependent on claim no. 15 of the ‘748 Patent, but other than the opinions he has expressed as to infringement of claim no. 15, Mr. DeGraff does not dispute that the Hoover Fusion has all the other elements of claim nos. 16 and 17. Thus, if Mr. DeGraff is incorrect with respect to claim no. 15—and, as shown above, he is—then the Hoover Fusion also infringes claim nos. 16 and 17 of the ‘748 Patent.

### The '008 Patent

#### Claim No. 1 of the '008 Patent

17. Mr. DeGraff also opines that six of the elements of claim no. 1 of the '008 Patent are missing in the Hoover Fusion. (DeGraff Aff. ¶¶ 28-35). I disagree.

18. Two of the six elements that Mr. DeGraff claims are absent are materially the same, for present purposes, as two of the elements discussed above in connection with claim no. 14 of the '515 Patent. (See DeGraff Aff. ¶¶ 29-30). These are the elements referred to as Elements 14.3 and 14.8 in my prior affidavit. (Jones Aff. ¶¶ 22-23 and 28). For the reasons discussed above (¶¶ 9-10), I disagree with Mr. DeGraff that any of these elements is missing from the Hoover Fusion.

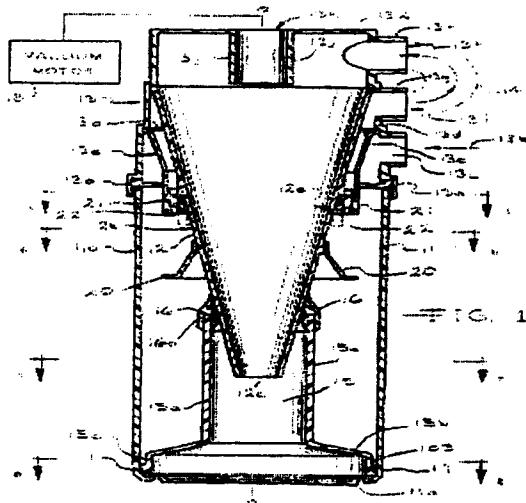
19. The third element that Mr. DeGraff maintains is missing is the requirement that the shroud means be positioned below the air inlet to the cone-shaped cyclone. (See DeGraff Aff. ¶ 31; see also discussion of Element 1.16 in the Jones Affidavit (¶ 62)). Mr. DeGraff contends that "the upper end of the shroud in the Fusion vacuum cleaner is above the top of the cyclone by at least 3/16 inch and, accordingly, above the air inlet to the cyclone." (DeGraff Aff. ¶ 31). This analysis is faulty because Mr. DeGraff apparently is including as part of the shroud referred to in claim no. 1 of the '008 Patent the portion of the plastic component of which the shroud is a part, but which is situated above the shroud and surrounds the air inlet to the inner cyclone. One skilled in the art of cyclonic vacuum cleaner technology, however, would understand that the shroud in this patent element is only the perforated portion of the plastic component that surrounds the outside surface of the inner cyclone. Mr. DeGraff does not dispute that the purpose of the shroud in this

patent is to act like a screen to prevent larger, lightweight fibrous material from escaping the outer container and clogging the inlet to the inner cyclone. (See Jones Aff. ¶ 15; Dyson Aff. ¶ 29). The only portion of the plastic component that performs this screening function is that portion containing the perforations. This portion of the component is several centimeters below the air inlet to the inner cyclone. (Jones Aff. ¶ 62). A photograph showing the location of the shroud on the plastic component is attached as Exhibit 34.

20. Mr. DeGraff also says that the shroud means does not, as required, have “perforations adjacent to the position intermediate to the cone opening.” (DeGraff Aff. ¶ 33). Mr. DeGraff maintains that “the position intermediate to the cone opening” refers to “the other end [of the shroud means]” closest to the cone opening and that the perforations on the Hoover Fusion’s shroud are not “adjacent” this end of the shroud, but rather “are spaced approximately an inch away from such location.” (DeGraff Aff. ¶ 33). There are two reasons this is not correct. First, Mr. DeGraff is reading the term “adjacent” too narrowly. One skilled in the art of cyclonic vacuum cleaner technology would understand the term “adjacent” as used in this claim element to mean only that the perforations be near the position intermediate the cone opening. There is no requirement they be immediately adjacent that position, and the claim does not say or imply as much. Second, contrary to Mr. DeGraff’s assertion, the perforations on the shroud are not “approximately an inch away” from the end of the shroud closest to the cone opening. (DeGraff Aff. ¶ 33). Using Mitutoyo Calipers, I have determined that the perforations on the shroud are less than one-half an inch (or about 11 millimeters or .43 inches) from this location.

In my opinion, this location is "adjacent" the end of the shroud closest to the cone opening.

21. The fifth element supposedly absent from the Hoover Fusion is the requirement of a "disc means provided on the shroud means." (DeGraff Aff. ¶ 34). Mr. DeGraff asserts that the words "provided on" in this claim element require the disc and shroud to be one integral component. (*Id.*). This interpretation, however, goes too far. Nothing in the patent requires the disc and shroud to be one component. The words "provided on" in this claim element simply mean that the disc be immediately below and touch the bottom of the shroud—which it does here. (Jones Aff. ¶ 65). Contrary to Mr. DeGraff's contention, the references to having a "combined" disc and shroud in the '008 Patent rather than the "separate" disc and shroud in the '748 Patent (see col. 1, ll. 24-30) do not relate to whether the disc and shroud are "separate" components but whether the disc and shroud are "separate" in terms of distance from one another. As can be seen in Figure 1 of the '748 Patent, shown below, the disc (item no. 20) is not touching the bottom of the shroud (item no. 21), but is located some distance below it.



In the '008 Patent, the disc and shroud are "combined" in the sense that they now touch. A photograph illustrating this point is attached as Exhibit 35. It is specious, in my opinion, to differentiate between a disc and shroud that are molded together and a disc and shroud attached together by screws (as is the case here).

22. The sixth, and last, element supposedly absent from claim no. 1 of the '008 Patent is the requirement that the disc be "at a lower longitudinal extent of the shroud means and the air inlet of the cyclone." (DeGraff Aff. ¶ 35). Mr. DeGraff contends that the Hoover Fusion's disc "is well beyond the lower longitudinal extent of the shroud, and even further beyond the recited air inlet." (*Id.*). This contention is erroneous. The claim element is met if the air inlet is above the shroud, and the disc is at a lower longitudinal extent of the shroud. Contrary to Mr. DeGraff's assertion, the Hoover Fusion's disc is not "well beyond" the lower longitudinal extent of the shroud and air inlet to the inner cyclone. In fact, as can be seen from the photographs attached as Exhibits 33 and 35, it is as close to the shroud and air inlet (which, as discussed (¶ 19), is located above the shroud) as is possible. It is located immediately below and touches the shroud.

Claim Nos. 2, 3, 7 and 11 of the '008 Patent

23. In my prior affidavit, I expressed the opinion that the Hoover Fusion also has each of the elements of claim nos. 2, 3, 7 and 11 of the '008 Patent. (Jones Aff. ¶¶ 68-75). All these claims are dependent on claim no. 1 of the '008 Patent, but other than the opinions he has expressed as to infringement of claim no. 1, Mr. DeGraff does not dispute that the Hoover Fusion has all the other elements of claim nos. 2, 3, 7 and 11 of the '008 Patent. Thus, if the Hoover Fusion infringes

claim no. 1 of the '008 Patent, then it also infringes claim nos. 2, 3, 7 and 11 of that patent.

**Claim Nos. 23 through to 25 of the '008 Patent**

24. As indicated in my prior affidavit, the elements of claim nos. 23 through to 25 of the '008 Patent are either the same as the elements of claim nos. 1 through to 3 of the '008 patent or differ from those elements in ways that are immaterial here. Thus, for the reasons discussed above (¶¶ 17-22) and in my prior affidavit (Jones Aff. ¶¶ 56-71 and 76), the Hoover Fusion has each of the elements of those claims.

25. For the reasons expressed above and in my prior affidavit (see Jones Aff. ¶¶ 54-76), the Hoover Fusion infringes each of claim nos. 1, 2, 3, 7, 11, 23, 24 and 25 of the '008 Patent.

**The '038 Patent**

**Claim No. 1 of the '038 Patent**

26. Mr. DeGraff opines that the Hoover Fusion does not infringe claim no. 1 of the '038 Patent because the distance between the cone opening and the base surface is 72.2 mm, which is outside the range cited in the claim of "less than 8 mm or between 30 mm and 70 mm." (DeGraff Aff. ¶¶ 38-39). This is incorrect for two reasons.

27. First, the distance is not 72.2 mm. Mr. DeGraff fails to provide any detail whatsoever on who conducted this measurement or when or how. As indicated in my prior affidavit, I used a sophisticated coordinate measuring machine to measure two different Hoover Fusions, and determined that the average distance between the cone opening and the base surface was 70.82 mm. (Jones Aff. ¶ 83). In

addition, the accused device performs substantially the same function in substantially the same way to achieve substantially the same result as the claim element, and thus should be deemed the equivalent of that claim element. (*Id.*). Mr. DeGraff does not disagree in this respect.

28. Mr. DeGraff also argues that claim no. 1 of the '038 Patent is not infringed because "the examiner . . . objected to use of the word 'substantially,' throughout the claims" and, therefore, "one skilled in the art . . . would not construe the dimensions or boundaries as being either 'substantially' or 'about' the recited dimensions." (DeGraff Aff. ¶ 40). This is, as much of Mr. DeGraff's other assertions, not correct. I have reviewed the relevant patent histories. Although it is true that the examiner objected to use of the words "substantially" or "about" in connection with certain other claims of the '038 Patent, the initial patent application never included the words "substantially" or "about" in claim no. 1 and, thus, the examiner had no occasion to pass judgment on the propriety of using such terms in regard to that claim. In short, the examiner never "objected" to the use of the word "substantially" with respect to claim no. 1. The Hoover Fusion infringes claim no. 1 of the '038 patent.

**Claim Nos. 13 and 14 of the '038 Patent**

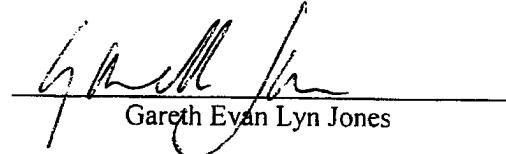
29. In my prior affidavit, I expressed the opinion that the Hoover Fusion also has each of the elements of claim nos. 13 and 14 of the '038 Patent. (Jones Aff. ¶¶ 91-94). Mr. DeGraff opines that the "upwardly extending annular wall from the base surface" described in these claims is absent from the Hoover Fusion. (DeGraff Aff. ¶ 43). He states that "[t]o the extent that the Fusion vacuum cleaner has a collector with a base surface, any wall associated with the collector is outside of

that base surface." (*Id.*). I disagree. As is discussed in my prior affidavit, and as is illustrated in the diagram attached as Exhibit 29 to that affidavit, the Hoover Fusion has an annular wall that extends upwardly from the base surface of the container.

30. For the reasons expressed above and in my prior affidavit (see Jones Aff. ¶¶ 77-94), therefore, the Hoover Fusion infringes claim nos. 1, 2, 3, 7, 13 and 14 of the '038 Patent.

### **Conclusions**

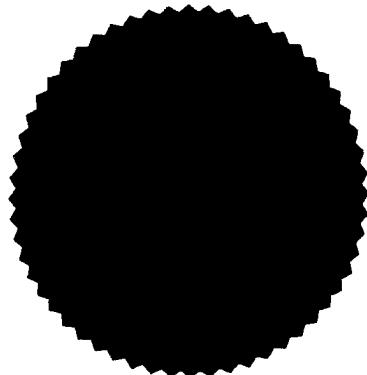
31. The Hoover Fusion infringes the specified claims of the four Patents in Suit.



Gareth Evan Lyn Jones

Sworn to before me this  
15th day of September, 2005

Notary Public



**APOSTILLE**

(Hague Convention of 5 October 1961 / Convention de La Haye du 5 octobre 1961)

**UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND**

1. Country: United Kingdom of Great Britain and Northern Ireland  
Pays: Royaume-Uni de Grande-Bretagne et d'Irlande du Nord

This public document / Le présent acte public

2. Has been signed by **A J Gill**  
a été signé par

3. Acting in the capacity of **Notary Public**  
agissant en qualité de

4. Bears the seal/stamp of **The Said Notary Public**  
est revêtu du sceau/timbre de

5. at London/à Londres Certified/Attesté  
6. the/le **15 September 2005**

7. by Her Majesty's Principal Secretary of State for Foreign and Commonwealth Affairs /  
par le Secrétaire d'Etat Principal de Sa Majesté aux Affaires Etrangères et du Commonwealth.

8. Number/sous No **G806657**

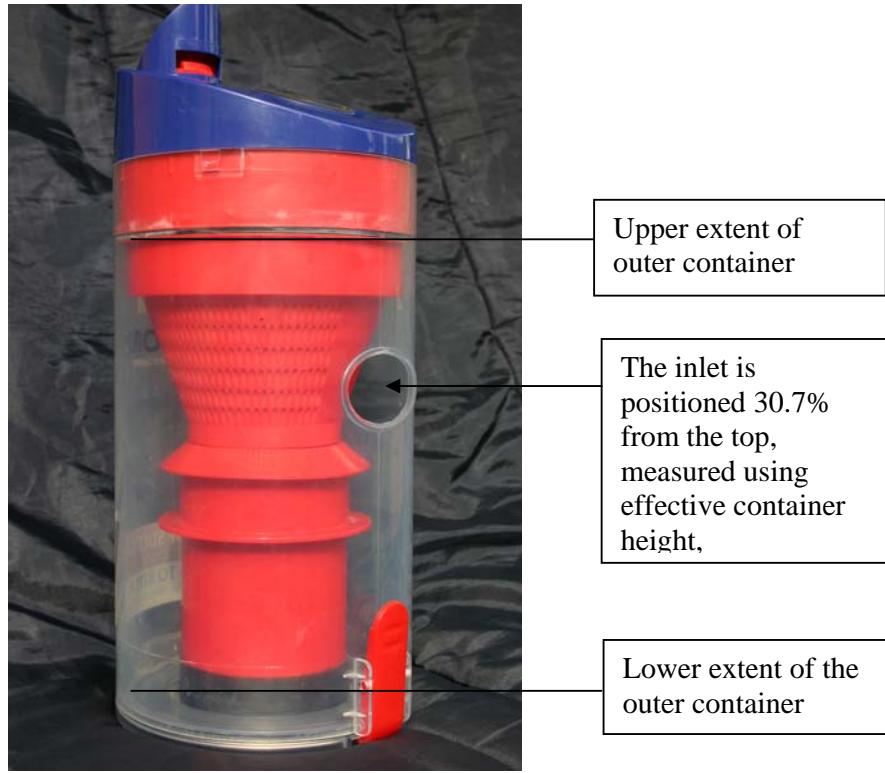
9. Stamp:  
timbre: 10. Signature: **J. Cooper**



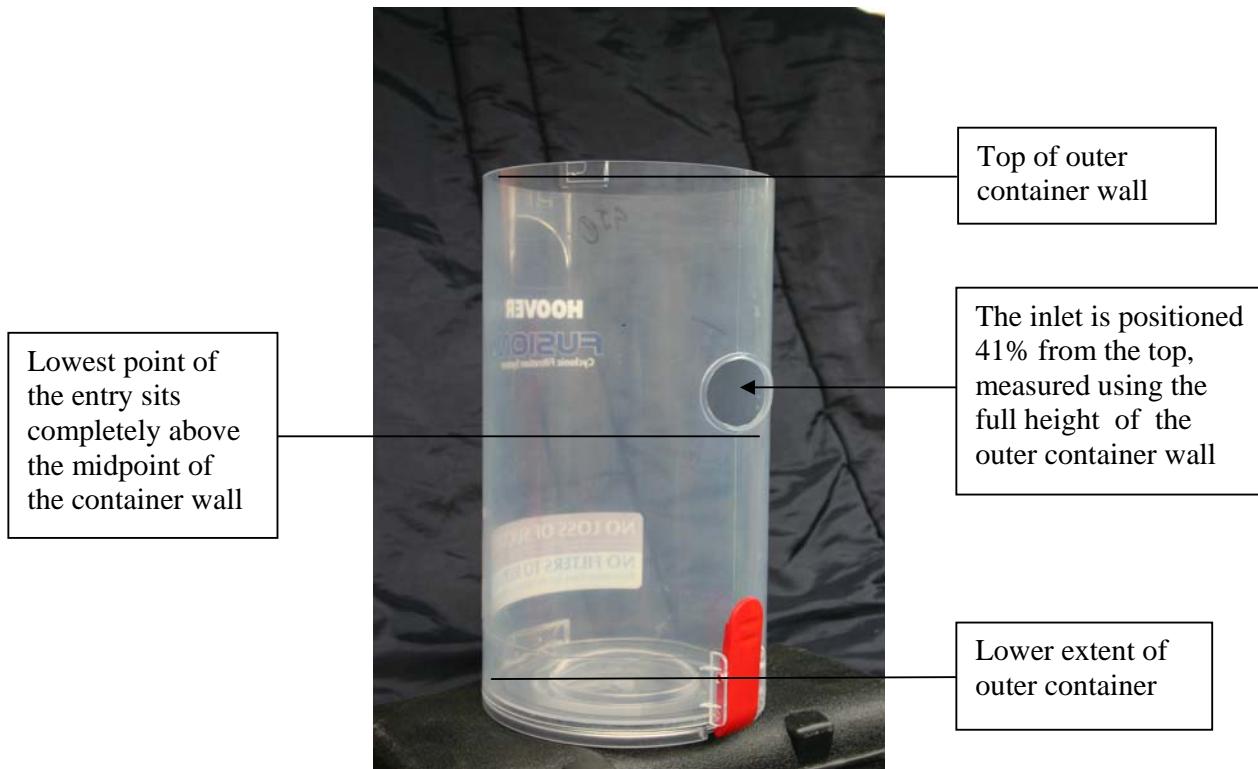
*For the Secretary of State / Pour le Secrétaire d'Etat*

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**Exhibit 30 – Photographs showing position of air inlet relative to outer container on the Hoover fusion**



**Figure 1 – Position of inlet shown relative to container volume**



**Figure 2 – Position of the inlet shown relative to container wall only**

**Exhibit 31 – Photographs showing orientation of the dirty air inlet to the outer container on the Hoover Fusion**



Teardrop shape is oriented for supplying tangential airflow to the inner surface of the outer container

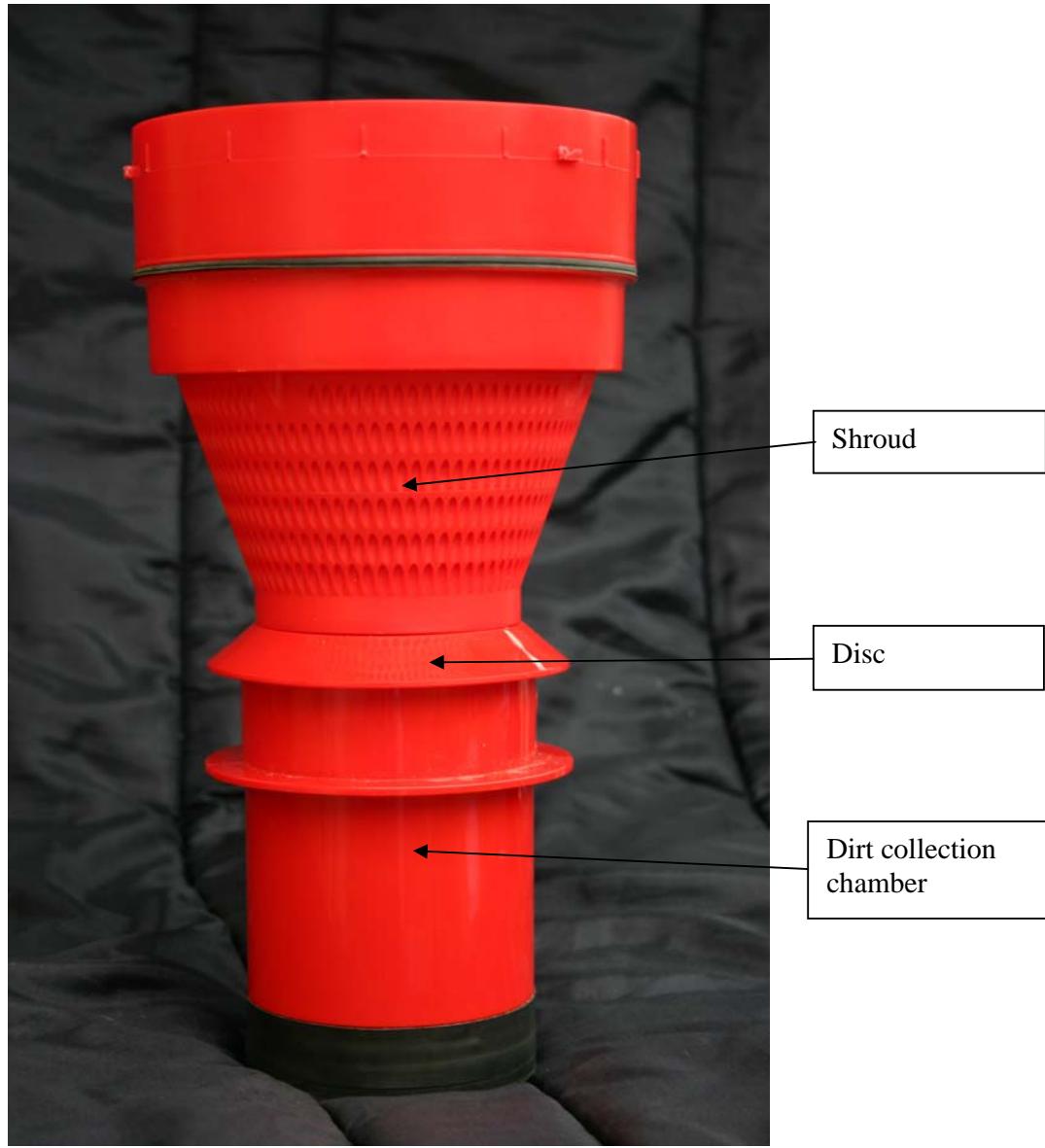


**Exhibit 32 – Photograph showing location of disc on inner cyclone of the Hoover Fusion**

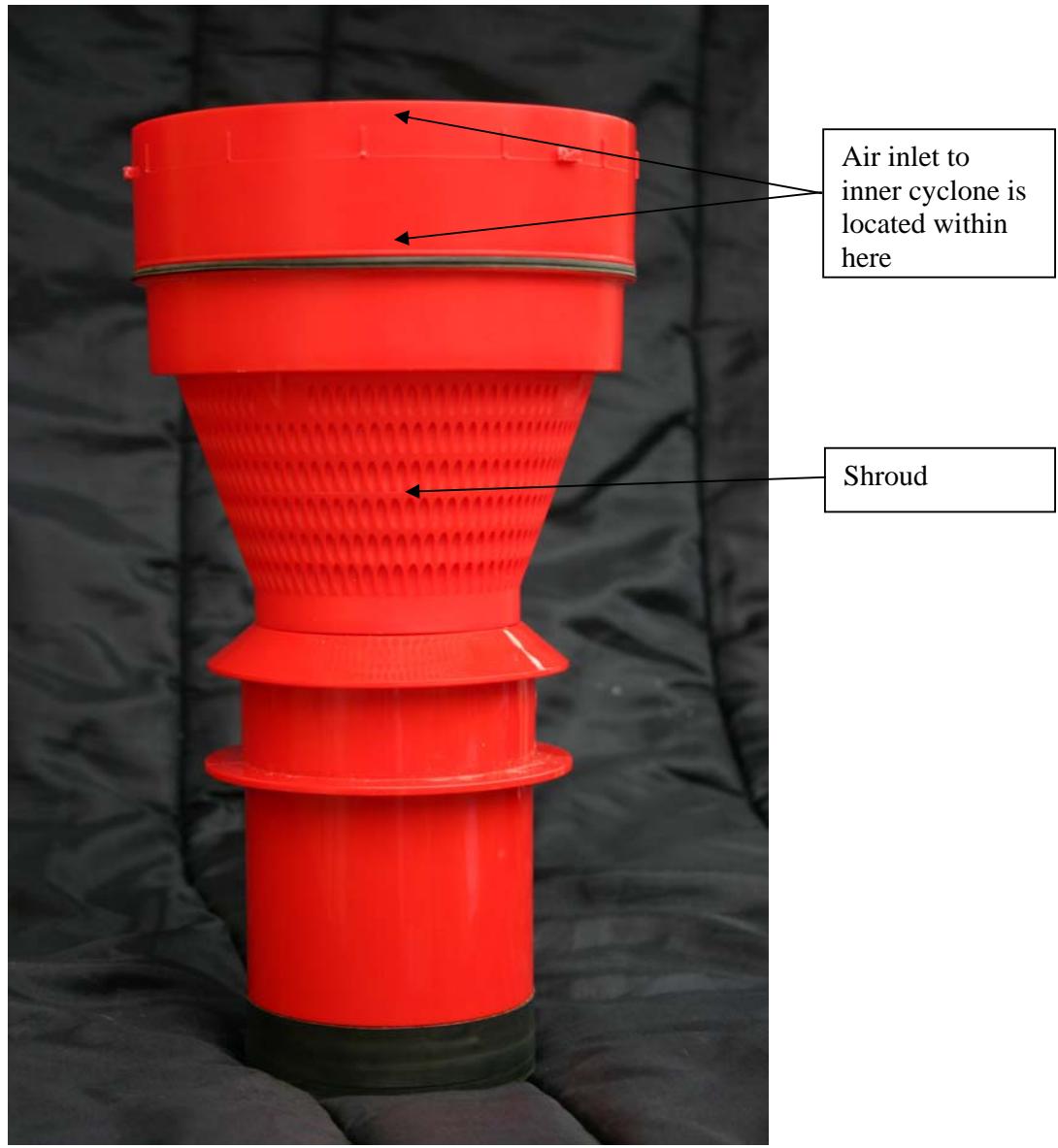


Note – for clarity the inner cyclone and disc are shown upside down from their normal operating positions. The receiving chamber and the component holding the shroud have also been removed.

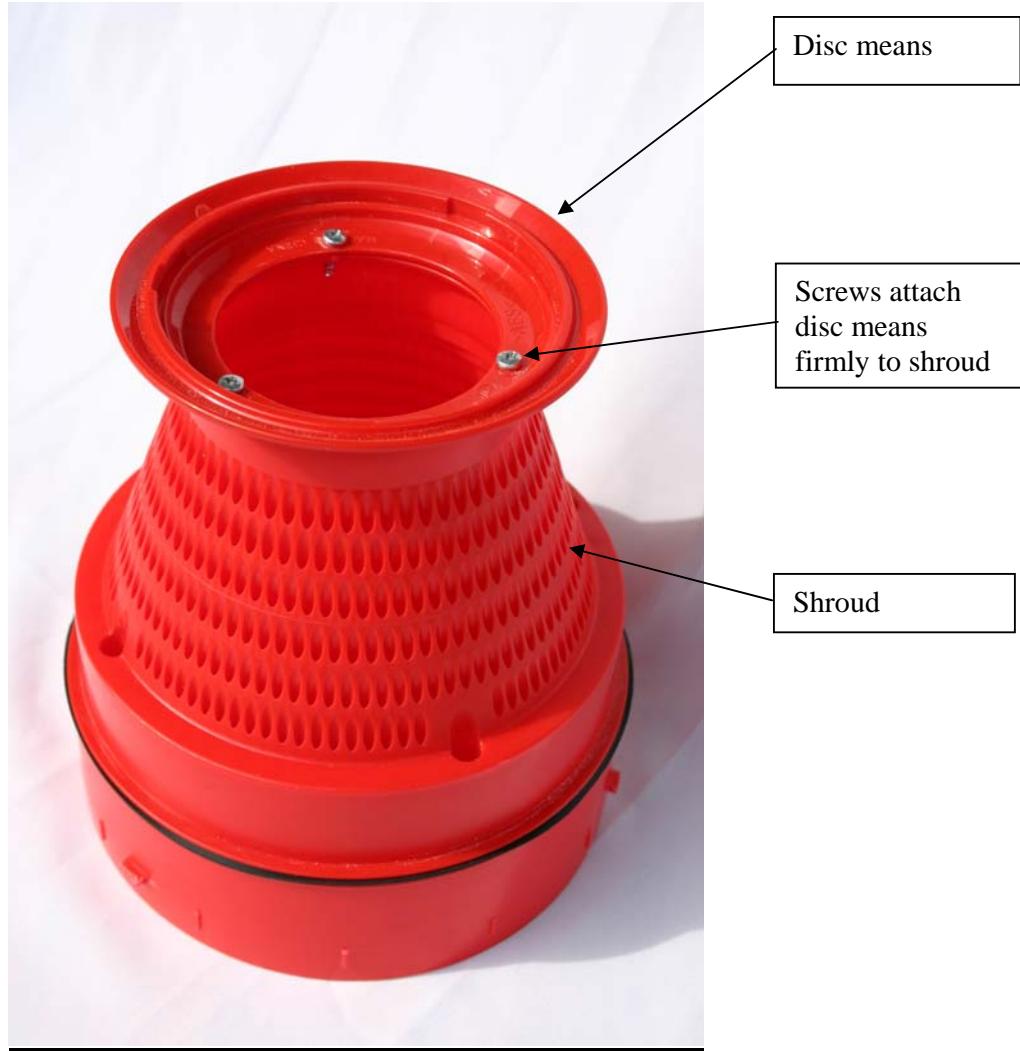
**Exhibit 33 – Photograph showing where disc is located relative to the shroud and the dirt collection chamber on the Hoover Fusion**



**Exhibit 34 - Photograph showing location of shroud in relation to air inlet to the inner cyclone on the Hoover Fusion**



**Exhibit 35 – Photograph showing the disc means provided on the shroud of the Hoover cyclone**



Note – for clarity the disc and shroud are shown upside down from their normal operating positions, and the receiving chamber and inner cyclone have also been removed

# **MAYTAG**

# **PI OPP. BRIEF**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

DYSON TECHNOLOGY LIMITED )  
and DYSON, INC. ) CASE NO. C.A. 05-434-GMS  
)  
Plaintiffs, )  
v. )  
)  
MAYTAG CORPORATION, )  
)  
Defendant )

**DEFENDANT MAYTAG CORPORATION'S BRIEF IN  
OPPOSITION TO DYSON'S MOTION FOR PRELIMINARY INJUNCTION**

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### 1. The '515 Patent

As set forth in paragraphs 6-17 of the DeGraff Affidavit, the Fusion vacuum cleaner fails to satisfy several claim limitations of claim 14 of the '515 patent. The requirement in the claim of "a dirty air inlet in an upper portion of the outer container spaced from the bottom" is not found in the accused product. The dirty air inlet of the Fusion vacuum cleaner is 41% of the distance from the top of the outer container - - hardly at an upper portion as required by the claim. (DeGraff Aff. ¶¶ 7-8). Dyson's suggestion that the upper portion is anything above the midline as belied by its own patent, which clearly demonstrates to one skilled in the art that the "upper portion" is at the top of the container, not at its midsection. With reference to Fig. 1 of the '515 patent, the text of that patent states "A dirty air inlet passage 16 communicates through the upper part of the side surface 14. . ." ('515 patent, col. 4, ll. 59-60). Fig. 1 clearly shows what was intended by "upper part" or "upper portion."

Claim 14 of the '515 patent requires that the dirty air inlet comprise a portion of the outer container and be "oriented for supplying dirt laden air into the container tangentially to the interior surface of the outer container." ('515 patent, col. 11, ll. 39-43). While the outer container of the Fusion vacuum cleaner does have a tear drop shaped inlet, as pointed out by Mr. Jones in his affidavit and identified in Exhibit 6 thereto, that inlet has nothing to do with causing tangential flow. As DeGraff avers, "the inlet that causes tangential flow in the Fusion vacuum cleaner is an insert that is separate and apart from the outer container, being attached to the vacuum cleaner housing, not the outer container." (DeGraff Aff. ¶¶ 9-10). "The tear drop shaped outlet referenced in Exhibit 6 to Dyson's Jones Affidavit is simply an opening to receive the insert." (*Id.*)

Also absent in the Fusion vacuum cleaner is the limitation in claim 14 of a "cyclone for receiving an air flow from the air inlet and for maintaining its velocity to a cone opening." ('515

satisfied. Multiple limitations of claim 14 of the '515 patent are absent in the Fusion vacuum cleaner. The absence of a single claim limitation is sufficient to avoid infringement.

## 2. The '748 Patent

Claim 15 of the '748 patent includes many of the same claim limitations as claim 14 of the '515 patent. Notably, claim 15 of the '748 patent requires "a dirty air inlet at an upper portion of the outer container" ('748 patent, col. 6, ll. 20-21), "a dirty air inlet . . . which is oriented for supplying dirt laden air into the container tangentially to the interior surface" ('748 patent, col. 6, ll. 17-23), and a "cyclone . . . for receiving an air flow from the air inlet and maintaining its velocity to a cone opening" ('748 patent, col. 6, ll. 27-33). As set forth above with regard to claim 14 of the '515 patent, none of these claim limitations are existent in the Fusion vacuum cleaner. (*See* DeGraff Aff., ¶¶ 18-25).

Further, claim 15 of the '748 patent requires "a disc means provided on the outside of the cyclone intermediate the receiving chamber and the air outlet of the container." ('748 patent, col. 6, ll. 47-49). As pointed out in the DeGraff Affidavit, the disc of the Fusion vacuum cleaner is not provided on the outside of the cyclone, but secured about an upper portion of the receiving chamber. Moreover, it is not intermediate the receiving chamber and the air outlet. In common usage, "intermediate" means "in the middle," consistent with Fig. 1 of the '748 patent and the associated specification. In the patent, the disc 20 is clearly in the middle of the receiving chamber 15 and the outlet passage 13f. In contradistinction, in the Fusion vacuum cleaner, the disc extends below the boundary of the receiving chamber itself. Accordingly, the positional statement of the disc being on the outside of the cyclone and being intermediate or in the middle of the outlet of the container and the receiving chamber simply is not satisfied. (*See* DeGraff Aff., ¶¶ 26-27). Notably, claim 15 requires that the disc be on the outside of the cyclone, in contradistinction to being merely "about" the cyclone.